1 JANUARY 1957

government
RESEARCH AND DEVELOPMENT
digest

data

TECHNICAL INNOVATIONS IN THE ARMED SERVICES AND GOVERNMENT AGENCIES

Vol 2 No 1

data on

ATOMIC ENERGY
AVIATION
COMMUNICATIONS
ELECTRONICS
LOGISTICS
MATERIALS
MEDICAL NEWS
ORDNANCE
SHIPS
TRANSPORTATION

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NAVY FLEET BALLISTIC MISSILE

POLARIS

data

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Arlington 6, Virginia

DATA Magazine, the government research and development digest, began independent publication 1 September 1956. Formerly a publication of the Navy Office of Information, DATA is now a commercial venture with rights to promulgate this digest of official military and government agency reports, papers and periodicals.

DATA provides a rapid information link between Industry and Government. It is designed to give readers a quick-reading scan of the latest developments in the military services and government agencies on a wide range of fronts. Coverage of speeches and interviews supplements the official released information so that trends and new developments may be accurately predicted by DATA.

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FEATURE

1. MODULAR CONSTRUCTION, THE KEY TO FUTURE PLANNING:

A long time ago we had what was termed an industrial revolution. It was more truly the age of the interchangable part.

A young inventor named Eli Whitney came to the United States Army in 1798 with a basket of nuts, bolts, stocks, hammers, triggers and barrels and told the purchasing officers that they were rifles, ready for delivery. They scoffed until he put one of the rifles together before their eyes. After that the Army...and the other services as well...have liked the idea of interchangable parts.

Now the idea is to take the interchangable part a bit further and make it interchangable groups of parts. The idea is especially adaptable to the electronics industry but is also applicable to other fields of production.

Interchangability of groups of parts depends on standardization of the individual elements regardless of who the manufacturer was, and in the electronics field particularly, high reliability of those elements so that the groups of parts...the components...will function uniformly.

They call it Modular Construction...dependable building blocks of parts. And it is a new and valuable concept in military planning. With automation, modular construction will mean a new industrial revolution and a better life for you whatever your occupation.

For the military services it means that the "black box" that contains radio, radar or fire control gear can be broken apart like a child's set of blocks to fit a variety of spaces. If one aircraft has a long lean niche for an ARC-62 transceiver and another aircraft has a fat cubical space, the radio gear can be pulled apart and formed into the available place.

How does this help the civilian?

First off, in order to achieve modular construction we have to have those reliable parts we spoke of, and they must be standardized. So we promote automation, the method of achieving this end. And automation, although it may at first pose a few labor problems, is the eventual way you and I will live better for less money and work a shorter working day. Automation, the science of automatic manufacturing control, will do this within the next few years...it has already begun.

The modular construction concept is destined to carry over into almost every mechanical device, and surely every electronic mechanism including radios and television. Modular construction will make complex products more serviceable and space fitting. ///DATA/

ATOMIC ENERGY

2. ATOMIC COCKTAIL, CANADIAN STYLE:

A favorite combination of the after hour clubs, alcohol and soda water, has solved an atomic reactor plant crisis.

The crisis occured at Canada's Chalk River plant when a uranium fuel rod overheated and burst through its conductor, spewing radioactive flakes of itself into its huge container of heavy water. The accident caused an immediate shutdown of the atomic oven, since the "hot" flakes threatened to contaminate the multi-million-dollar installation.

Efforts to mechanically flush or scrub the material from the bottom of the room-size container failed because of the multiplicity of tubings. Suggestions that the oven be filled with solutions denser than the metallic flakes to float them off were rejected as too expensive and time consuming.

William H. Stevens, head of the developmental chemistry branch, Atomic Energy of Canada, finally decided to try to lift the flakes up on bubbles of soda water. To make the bubbles stick to the flakes, he tossed in 40 gallons of alcohol and two pounds of oleic acid...the acid that forms when butter turns rancid.

The idea worked. ///AEC Chalk River 1210/

3. NAVY ANNOUNCES PROGRAM TO STUDY RADIOACTIVITY IN AIR:

An expanded program for the study of the distribution of natural and man-made radioactivity in the air was announced by the Navy.

The program will be conducted by the Naval Research Laboratory in cooperation with the Atomic Energy Commission, the Weather Bureau and the meterological services of Ecuador, Peru and Chile. A network of 10-12 monitoring stations is planned for the 80th meridian West, extending from Greenland to Antarctica.

It is planned to operate these stations during the International Geophysical Year, 1957-1958. When coordinated with meterological data, the information obtained by these stations will give scientists more complete knowledge of the distribution of both natural and fission-product radio-activity. Also, rate of activity removal and the factors responsible for the removal of this activity from atomosphere and air masses will be studied.

This information would also be of help to biophysicists in evaluating the possible hazards of fallout. ///Pentagon OPI 1213/

AVIATION

4. TRANSPARENT RUBBER FOR AIRCRAFT WINDSHIELDS:

Transparent rubber is being tested by the Air Force as a way to beat the heat on airplane windshields.

The rubber will be used as an interlayer in windshield glass of new supersonic Air Force airplanes. With this new material, it is expected that airplane windshields will be able to withstand twice as much heat from air friction at high speeds. Since aircraft have surpassed the speed of sound, surface temperatures have increased to such an extent that the flexible, transparent plastic now used as a windshield interlayer softens and loses its strength. With the interlayer useless, the windshield glass shatters easily.

The new rubber interlayer is being developed for the Air Research and Development Command by the Dow Corning Corporation, Midland, Mich. It retains adequate strength up to 350 degrees Fahrenheit as compared to the 180 degree (F) limit on present plastic interlayers. ///ARDC 1212 314/

5. AIRCRAFT ENGINE FIRE DETECTORS NEEDED:

The government wants a reliable, fast-acting fire detector for aircraft engine systems and does not have an adequate detector for present high performance aircraft.

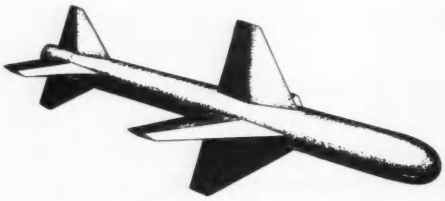
Too often in the past, frequent false alarms have undermined the airman's confidence in his fire detector. In some cases fire was detected too late or not at all.

The difficulty in designing a good detector is the necessary discrimination that must be built into the system. A detector must sort out fires from other adverse phenomena such as temperature ranges from -65 degrees to over 500 degrees (F), wind speeds, surface skin temperatures, rain, hail, fog, salt spray, dust, oil, fumes and vibration, as well as extreme pressure changes.

The detector, designed to respond to radiant energy from flames, for example, must discriminate between flames and sunlight, lightning, gun-fire and beacons.

The apparatus must also survive flame temperatures over 2000 degrees (F) so that it can indicate that the fire is out and also be ready to detect another possible fire outbreak. In addition to all this, the detector must be small in size and lightweight. /// NBS 2075/

missiles



6. FIRST VIEW OF SPARROW II:

Shown here for the first time is the exterior configuration of the SPARROW II air-to-air missile being developed for the Navy by Sperry Gyroscope.

The SPARROW II differs from its predecessor, SPARROW I, primarily in its homing system. SPARROW I is a beam rider. The bird depends on the search radar of the mother aircraft to illuminate the target. But SPARROW II is an active weapon and contains all necessary homing equipment within itself.

In general outline the SPARROW's are similar. But SP-I has a pointed nose and guidance fins while SP-II has a blunt, rather than pointed nose to house the active search radar and squared-off fin tips.

A third member of the SPARROW family, SPARROW III, is also under development. It is a semi-active homing missile depending on the launching aircraft for its initial guidance and then relying on its own homing unit to make the kill. ///DATA/

7. NAVY'S FLEET BALLISTIC MISSILE, POLARIS:

Top priority project in the Navy is development of the Fleet Ballistic Missile. Although name of the new weapon has not as yet been released officially, DATA has received information that the rocket will be tagged POLARIS.

POLARIS will have a range of "...much more than 200 miles" which poses a problem for the Navy. With the new announcement of long range missile control going to the Air Force as stated by Secretary of Defense Wilson, will the Navy be allowed to keep POLARIS once they get it perfected?

No exterior configuration views of POLARIS have been authorized for release at this time, but appearance of the missile is quite similar to the Army's JUPITER.

As a ballistic missile, POLARIS has no internal guidance system. It is aimed by a fire control unit in the same manner as a shell but by different controls. After initial guidance from the launcher it free falls in the same type trajectory as an artillery projectile.

POLARIS will very probably be designed for submarine launch. ///DATA/

67 451 A A 6

8. ARDC TO ANNOUNCE STUDY CONTRACT FOR ROCKET DESIGN:

The Air Research and Development Command (ARDC) will announce a half-million dollar study contract to the Minneapolis-Honeywell Regulator Company.

The contract is concerned with the development of a new type air-to-ground rocket...not a guided missile. ///ARDC 1220 301/

9. AIR FORCE TO REBUILD AT CAMP COOKE FOR MISSILE WORK:

The Air Force is taking over the major portion of the Army's Camp Cooke Military Reservation for use as a training base for Air Force missile work.

Extensive rehabilitation, modernization and construction will be required over an extended period. The Holmes and Narver Architect-Engineering firm of Los Angeles is the design agency for the project.
///Pentagon OPI 1212/

10. MISSILE FIRING MISSILES:

A new missile now being developed releases other missiles at a certain point in its trajectory. This is not a test vehicle, but a weapon.
///DATA/

11. MATADOR WING AND TAIL OF ALUMINUM HONEYCOMB:

Aluminum honeycomb construction in the Martin TM-61 is four times as fast and one third the price of conventional wing construction. Covering skin of the surface-to-surface MATADOR is bonded by an adhesive. The TM-61 is now operational. ///ARDC 1210 313/

12. HITCH-HIKERS TO TAG ALONG ON SOME EARTH SATELLITES:

Some of the earth satellites being fired as part of the research programs of the International Geophysical Year will be carrying little "hitch-hikers" or sub-satellites made of aluminum coated plastic.

The hitch-hiking unit will be ejected from the third rocket booster at maximum altitude and will automatically inflate itself. Measuring 20 inches in diameter, the featherweight satellites will be used to check air density in the extreme outer limits of the earth's atmosphere as well as to determine the prime satellite's drag. Basic construction material will be Mylar plastic. ///NACA 1214/

COMMUNICATIONS

13. SINGLE SIDE BAND LOOMS AS ANSWER TO CROWDED RADIO SPECTRUM:

The military may have a vast amount of new communications channels and more radio and TV broadcasting permits may be allocated for civilians as a result of the single side band method of radio transmission.

Strongly advocated by the Army Signal Corps, single side band allows greater use of the existing radio spectrum. With this technique more stations can broadcast in present existing spaces.

The Army is now using single side band in the higher frequencies where stability of transmission is easier to obtain, and will begin a program of exploiting the new method to a much greater degree in the coming months. ///Col. J. E. Kelsey, Army Signal Corps R&D/

14. SIGNAL CORPS DEVELOPS PHOTOS BY HEAT ALONE:

What is it that bakes like a cookie but isn't a cookie?

At the Fort Mommouth, N. J., Army Signal Corps' Laboratories it's a photograph.

Plastic pictures are cooked there in an oven at 320-350 degrees Fahrenheit. Heat alone brings out the image. The new picture-making technique, perfected by the Army Signal Corps and Ferro Chemical Co., requires no darkroom or photographic chemicals. Asbestos gloves are used to remove the picture which is mounted on a sheet of aluminum to insure even distribution of heat. Photo on request. ///APS 56-5954/

15. TOTAL DARKNESS BLACK-OUTS NOT BROKEN BY NEW NAVY INFRARED SIGNAL LIGHTS:

A new infrared transmitting set, the AN/SAT-2, is being installed throughout the Fleet. It transmits in the infrared spectrum between 0.75 and 1.2 microns. Transmissions in this region of the spectrum permit signaling in total darkness and during radio silence.

Signaling range between infrared transmitting set AN/SAT-2 and the receiver, infrared viewing set AN/SAR-4, is 8000 to 10,000 yards in clear weather at night. Infrared radiation is subject to the same limitations as visible light and its range is reduced by adverse weather conditions such as fog, rain, snow and haze. ///Nav Com BULLETIN 12-4/

16. FACTS, NOT FOLDEROL, HELP MAKE BETTER LETTERS:

The Navy Department recently devoted a month to better letter writing. Promotional pieces stressing revamped ideas and giving concrete, clear examples were developed and distributed to Navy civilian personnel as well as the military.

Industry might also profit from the suggestions.

In a booklet prepared by the Navy Management Office, "types" of letter writers and their traits are portrayed by cartoons. Of course, these types represent other letter writers, not you, but you'll recognize many co-worker portraits. For example there's Blabbermouth Bill (who finally gets to the point on page three), Nitpicking Ned (his forte is returning letters to correct trivial errors), Copy-Happy Garl (six copies minimum, ten routine), Gobbledygook Gary (the obscurer the better).

A letterwriter checklist at the back of the booklet is an interesting profile of your own strong points--or weaknesses. The 4-S Badge of honor is stressed: Shortness, Simplicity, Strength and Sincerity.

Single copies of these correspondence guides can be obtained (as long as the supplies last) by writing to Chief, Navy Management Office, Main Navy Building, Washington 25, D. C. ///Navy Management Office/

17. ARDC STUDIES LONG DISTANCE COMMUNICATIONS PROBLEMS:

Experiments with a relatively new method of long distance communication called "over-the-horizon scatter propagation" are being conducted by the Electronics Division of Westinghouse for ARDC. The program is designed to provide answers to long distance Ultra High Frequency transmission problems.

Better know to many in electronics circles as "Tropospheric Scatter" communication, signals are reflected or "scattered" from the troposphere to antennas beyond the horizon. ///ARDC 1210 308/

18. NAVY WANTS DAYLIGHT SIGNAL LANTERN:

The Navy would like very much to have a daylight signaling lantern (omni-directional light). It would have valuable advantages in handling administrative and tactical messages.

The British are reportedly also working on the idea and are said to have a daylight lantern that has proven effective in promulgating broadcast traffic and expediting weather reports.

With electronic countermeasures becoming increasingly effective, other cummunications methods are desired. ///Nav Com BULLETIN/

ELECTRONICS

19. PROBLEMS OF THE ELECTRONICS INDUSTRY:

In personal interview, DATA asked military leaders of the electronics industry what problems needed the most attention. The list that follows is a composite arranged in order of urgency by the following men: Lt. Gen. Clarence S. Irvine - AMC, R/Adm. W. F. Raborn - BuOrd, Capt. W. F. Sweeney - Head, BuAer Avionics, Col. J. E. Kelsey - Signal Corps R&D, Capt. Paul Van Leunen - Navy Surface Craft.

Problems in order of urgency of solution: 1. Reliability of equipment, 2. Standardization of parts needed, 3. Equipment incompletely engineered when it reaches field, 4. Problems of heat in the equipment in high speed missiles and aircraft and 5. Reluctance of electronics producers to adopt standardized parts and automation methods.

More information on request. ///DATA/

20. ADVANCES IN PRODUCTION OF GERMANIUM TRANSISTORS:

Technical advances in the production of germanium and the semiconductor devices for which it is a nerve center have been reported by the General Electric Company under contract to the Army Signal Corps.

GE's 402-page industrial preparedness study of transistors and diodes has just been made available to industry.

The detailed illustrated report, PB 121291 Industrial Preparedness Study of Transistors and Diodes, may be ordered from OTS, U. S. Dept. of Commerce, Washington 25, price $8.00. ///Commerce/

21. ELECTRONIC COMPUTERS OPEN NEW FRONTIERS FOR MEDICINE:

In a recent symposium at the Argonne Cancer Research Hospital in Chicago, several important medical leaders expressed views that electronic computers could be effectively used as tools to conquer diseases and solve medical problems.

The Air Research and Development Command, currently engaged in extensive research on computers and their application in the development of aircraft, has entered into the medical application of computers in an effort to give the nation the full benefit of the research and technological advances which have been made.

///ARDC 1214 296/

LOGISTICS

22. "SUPERMARKET" FOR MILITARY SUPPLY ITEMS:

A "supermarket" technique of issuing high volume and fast moving items is being tested at the Marine Corps Supply School at Quantico, Va.

Written supply orders are a thing of the past as commanding officers use charg-a-plates. "Shoppers" designated by the CO's shop for items in much the same manner as a housewife doing her marketing at a self-service grocery store.

Cashiers at check-out points ring up purchases, then stamp the sales ticket with the charg-a-plate. The plate contains all the accounting data necessary for processing the order.

Although still in the experimental stage, results to date have been very promising. ///Navy Management REVIEW 11/

23. GOVERNMENT WORKS TO MAKE BULL MORE PALATABLE:

Here's a steer for you:

The U. S. Agriculture Department is seeking to develop male cattle that will be of more gentle and tender disposition when they reach the dinner table.

Research done by the Department indicates that tenderness is inherited and can be passed on to succeeding generations through selective breeding. The problem now is to find a reliable test for tenderness that can be used on live animals. ///Agriculture/

24. PROJECT MASS REVAMPS ARMY SUPPLY:

Army supply history is being made by the U. S. Seventh Army in Europe and showing the way to a new budget-slashing time-slicing supply system...Project MASS (Modern Army Supply System).

Basic principle is maximum service with minimum stock and full utilization of electronic accounting and control methods.

As a fully-equipped, peacetime field unit, the Seventh Army was selected as the test force for this new system. Its position in the NATO program makes a reduction in vulnerability to enemy attack especially essential.

Requests for items are transferred to Stock Control by electrical sound impulses and a special transceiver. ///Seventh Army ANF 12/

MATERIALS

25. FURTHER TESTS ON TEFLON REVEAL VERSATILITY:

Teflon, the plastic with the lowest coefficient of friction for any known solid, has been shown to provide new protection for metals in tests conducted by the Marine Corps on numerous weapons.

Teflon is sprayed on as a thin film, and weapons coated with the material resisted absorption of any liquid, and adherance of ice, dust and dirt. Coatings of Teflon not only afford protection but also lubricate small arms for indefinite periods, under varying temperature conditions.

The Marine Corps report, the first on a projected series of tests, can be had for $1.25 by writing to OTS, U. S. Dept. of Commerce, Washington 25, and asking for Teflon, PB 121286. ///Commerce/

26. FLAWS IN METAL COATINGS LOCATED BY NEW METHOD:

By photographing an electroplated specimen exposed to radiation, the National Bureau of Standards has developed a new method of detecting flaws in metal coatings.

Copies of the NBS report, No. 2057, are available from DATA or the National Bureau of Standards. No charge. ///Standards 2057/

27. SYNTHETIC RUBBER RESEARCH PAPERS AVAILABLE:

A collection of recent research papers from the Government's Synthetic (Copolymer) Rubber Program has been made available to industry through the Office of Technical Services, U. S. Dept. of Commerce. A complete list of the reports may be obtained from OTS, Commerce, Washington 25, for 25 cents. Ask for PB 118310-S. ///Com./

28. TRANSPARENT GUARDS FOR BUZZ SAWS:

New saw guards that give operators full visibility for all cutting operations normally carried out on circular saws have been developed by the New York Naval Shipyard.

Metal guards now generally in use make it impossible to see the actual sawing operation. More infomation on request. ///NYNS 11-39/

29. NEW REFUELING COUPLER FOR PROBE-DROGUE METHOD:

The new coupler, developed by ARDC at Dayton, increases the maximum rate of fuel flow from 300 to 1200 gallons per minute. Probe and drogue aerial reueling time has been cut by 75 percent. It will be used as a standard Air Force aerial refueling coupler for all future tactical fighters. More information available. ///ARDC 1128 302/

30. IGNITION AND SPARK-IGNITION SYSTEMS BIBLIOGRAPHY:

Much of this material will prove of interest to the aviation industry. Send 15 cents to the Government Printing Office, Washington 25. Ask for the report on spark-ignition, NBS Report 580. ///Standards/

31. RESEARCH PRIMARY FUNCTION OF NBS--BUT USEFUL PRODUCTS, INFORMATION SERVE INDUSTRY:

Would you think leather was under scrutiny at the National Bureau of Standards? Well, it is--and has been for the past 40 years. But leather research is only one of the diverse and seemingly strange objects under constant investigation in the Bureau's laboratories.

Recent developments include a "coating" for titanium to help prevent oxidation, an instrument for making routine comparisons to the nearest ten-millionth of an inch, and a fundamental unit of sugar color.

NBS research in leather (NBS Tech Report 2059) is directed at the structure of collagen, the basic leather forming protein of hides. In the future the Bureau will study leather degradation by radiation.

NBS research in titanium coatings (NBS Tech Report 2072) reports success in depositing hard, adherent protective coatings on titanium by an electroplating method so that it won't gall or oxidize at high temperatures.

NBS research on the interferometric comparator (NBS Tech Report 2066) which measures to the nearest ten-millionth of an inch, is necessary to check the lengths of industry's master gauge blocks.

NBS research on sugar color and scale (NBS Tech Report 2073) marks the first time in fifty years that a reference material has proved satisfactory in characterizing a number of typical sugar solutions. Color plays an important part in evaluating liquid sugar products and detecting changes in processing.

All the above reports are available on request from either the Bureau of Standards Information Office, Washington 25, or DATA. No charge. ///National Bureau of Standards/

MEDICAL NEWS

32. PILOT'S EMOTIONS RELATED TO TOLERANCE LIMIT:

An aggresive, confident pilot is better able to withstand the forces acting upon him in high speed flight maneuvers than a pilot suffering from despondency, anxiety or fear, the Air Research and Development Command has learned. Studies to support this conclusion were made at Dayton by Air Force medical researchers. Eighty-five individuals were tested. More information available. ///ARDC 1219 298/

33. BIOLOGICAL DATA-BOOK A COMPREHENSIVE WORK:

A massive publication, "Handbook of Biological Data," has just emerged as the result of many years of work by numerous doctors and scientists. Dr. John W. Heim, Head Physiology Branch of the Wright Air Development Center's Aero Medical Lab, directed the project.

The book covers living organisms of both animal and plant origin. It is commercially published by the W. B. Saunders Co. of Philadelphia. More information available on request. ///ARDC 1207 306/

34. ORTHOPEDIC SURGERY VOLUME NOW AVAILABLE:

Injuries to bones and joints made up the largest single group of casualties during World War II. This is among the information contained in "Orthopedic Surgery in the European Theatre of Operation," which has been published by the Army. The volume may be obtained from the Superintendent of Documents, Government Printing Office, Washington 25. Cost is $4.00. ///Pentagon OPI 1126/

35. MEDICAL CARE IN CIVILIAN HOSPITALS FOR DEPENDENTS:

Big thing in the new Dependent's Medical Care Act of Dec. 7, is the care authorized for military dependents in civilian hospitals. Before this, if a wife couldn't get into a military facility, the soldier had to foot the bill for civilian hospital treatment. President Eisenhower, who urged passage of the bill, hailed it as a measure designed to boost the morale of our fighting forces throughout the world. Government sources estimate the bill will cost about $70 million the first year. ///Office Dependents Medical/

ORDNANCE

36. NOL DEVELOPS UNDERWATER EXPLOSION RECORDER:

A mechanical recorder that measures shock from underwater explosions has recently been developed at the Naval Ordnance Laboratory. Electronic devices frequently fail to function under extremely heavy shock conditions.

The mechanical shock recorder depends on a hollow, twisted tube called a bourdon tube which untwists when exposed to great shock. A stylus on a free end of the tube scribes a line on a revolving smoked-glass drum and thus records the frequency and amplitude of pressure variations. ///Naval Ordnance Laboratory 12-05/

37. NAVY ATOMIC DEPTH CHARGE IS A LULU:

LULU is her name and she is quite a trouble maker. The Navy's new atomic underwater device has well over a hundredfold more destructive area power than a similar sized Torpex-loaded depth charge. ///DATA/

38. NEW MACHINE GUN, T-161, WILL REPLACE THREE OTHERS:

The Army has developed the T-161 , a lightweight general purpose machine gun to replace all three of the present caliber .30 machine guns. It is so light in weight that the 7.62 mm shooting piece can be fired from the shoulder, hip or from a newly developed aluminum tripod mount. It is chambered for the standard NATO cartridge.

Photos on request. ///APS 56 5910/

39. AERIAL MINELAYING STILL BIG GOAL FOR NAVY:

The two unfortunate crashes of the Martin P6M SEAMASTER prototypes have failed to deter Navy interest in development of a large jet seaplane tactical bomber capable of aerial reconnaissance and minelaying. The combination of the seaplane -- able to operate from forward areas without fixed bases -- and mine warfare -- proven such an effective block to troop landings (mostly ours) in World War II, is not only a fascinating idea, but to the Navy, a necessary one. ///DATA/

SHIPS

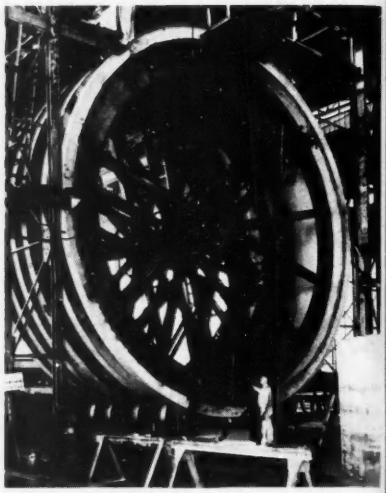
40. LARGEST SUBMARINE EVER BUILT UNDER CONSTRUCTION:

Shown at right is the wheel-like midship hull section of what will be the largest submarine ever built.

The USS TRITON will be powered by twin nuclear reactors and will have a displacement of 5450 tons as compared with the 3000 ton NAUTILUS, the world's first nuclear sub.

The TRITON is being built by the Electric Boat Division of the General Dynamics Corp. at Groton, Conn. TRITON is designated as a radar picket sub and will provide search and location information to fast Navy task forces.

///Navy Information/



41. MSTS TO PROCURE STEEL LIFE BOATS:

Beginning about July 1, 1957, the Military Sea Transportation Service of the Department of Defense plans to procure approximately 46 steel life boats for delivery over a six-month period.

Each of the 30.66-foot boats will have a 77-person capacity and will be used as replacements in transports of the MSTS.

Specifications will be prepared by MSTS. Procurement, including invitations for bid and awarding of the contract, will be administered by the Navy's Bureau of Ships.

To encourage maximum competition from potential suppliers, firms not having Coast Guard approval for a boat of this size and type will be permitted to deliver, as the first boat under the contract, a prototype model built by them, tested and approved by the U. S. Coast Guard.

Prior to award of the contract, the successful bidder will be required to submit prints of his proposed boat.

Interested manufacturers, regardless of whether they are now government contractors, should address inquiries to Bureau of Ships, Navy Department, Washington 25, D. C. ///Pentagon OPI 1220/

TRANSPORTATION

42. TRAILER USED AS ACID TANK:

One of the big problems of guided missiles and rockets has been fueling them. Nitric acid has to be used as an oxidizer and handling this acid is dangerous business. But the Army Chemical Corps, working with the Air Force, thinks it may have the problem licked.

It has devised a special 1500-gallon trailer designed especially to handle this fuel. Made completely of stainless steel to resist the corrosive effect of the acid, it contains a pump of special design that allows both filling and emptying the tanks of a guided missile.

The fumes of nitric acid are so poisonous that they cause the lungs to deteriorate and a person affected would drown in his own body fluids. A fire or explosion might result if the acid touched any organic material. Soldiers handling the acid fueling wear head-to-toe protective clothing. ///Army News Features 12/

43. ARMY WANTS NEW LIGHTWEIGHT ARMORED CARRIERS:

The Army is keenly interested in developing a family of lightweight armored carriers which can carry personnel, equipment and supplies--can be used as weapons platforms, command and reconnaissance vehicles--and can be lifted by medium assault and medium transport aircraft.

They should be amphibious, have crosscountry mobility and provide protection against small arms fire, fragmentation, and, to the extent possible, the effects of atomic weapons.

Additional information including more specific requirements is available from the Chief of the Bureau of Ordnance, Department of the Army, Washington 25, D. C. ///Army Ordnance/

44. MACHINE TESTS BRIDGE STRENGTH FOR ENGINEERS:

The ability of a bridge to withstand the severe test of wartime conditions can now be estimated to a greater degree by a machine being used by the Corps of Engineers Research and Development Labs., Ft. Belvoir, Va.

The machine can apply loads up to 400 tons and can be augmented to apply greater stresses. Actual field use of the bridge is simulated.

(continued on page 16)

(44 continued)

The bridge testing machine is essentially a structural frame, with a hydraulic system supplying the necessary forces for loading.

A railroad bridge with trusses 15 feet deep and 120 feet long was recently tested to the extreme capacity by augmenting the machine's load with four medium tanks. ///Ft. Belvoir Engineer R&D Labs/

45. MOBILE DENTAL CLINICS TO SERVICE REMOTE AREAS:

With the establishment of many anti-aircraft sites for national defense, servicing those small units as well as others with regard to dental care was a problem facing medical authorities in the Armed Forces. To help solve the problem, 12 newly developed mobile dental clinics have been bought by the Department of Defense. The vans, 30 feet long and of standard width, are equipped to operate either independently of fixed electrical and water outlets or with them. Each van has two dentist's chairs--step up, no waiting--and also a laboratory and X-ray machine for complete dental care.

The 12 vans, each costing $192,000, are manufactured by the Lyn Coach and Truck Co. of Oneonta, N. Y. Delivery is scheduled by the end of January 1957. ///Pentagon OPI 1203/

46. NAVY USES SLEDS FOR MOUNTING GCA UNITS:

With Task Force 43 at McMurdo Sound in the Antarctic, the sled is the basic vehicle for everything including mobile Ground Control Approach units. Photos of Antarctic GCA operation and other Task Force 43 photos, released by that activity Dec. 13, 1956, are available on request from DATA. ///Task Force 43/

DEADLINE DATA

47. BIDS OPENED FOR FIRST NAVY CAPEHART PROJECT:

Bids are now being received for construction of 435 units of the first Navy housing project under the Capehart Act. The units will be built at the Marine Corps Air Facility, New River, N. C. This is only the first of 56 new housing projects planned for the Navy portion of the Capehart program. Additional information on request. ///Pent. OPI/

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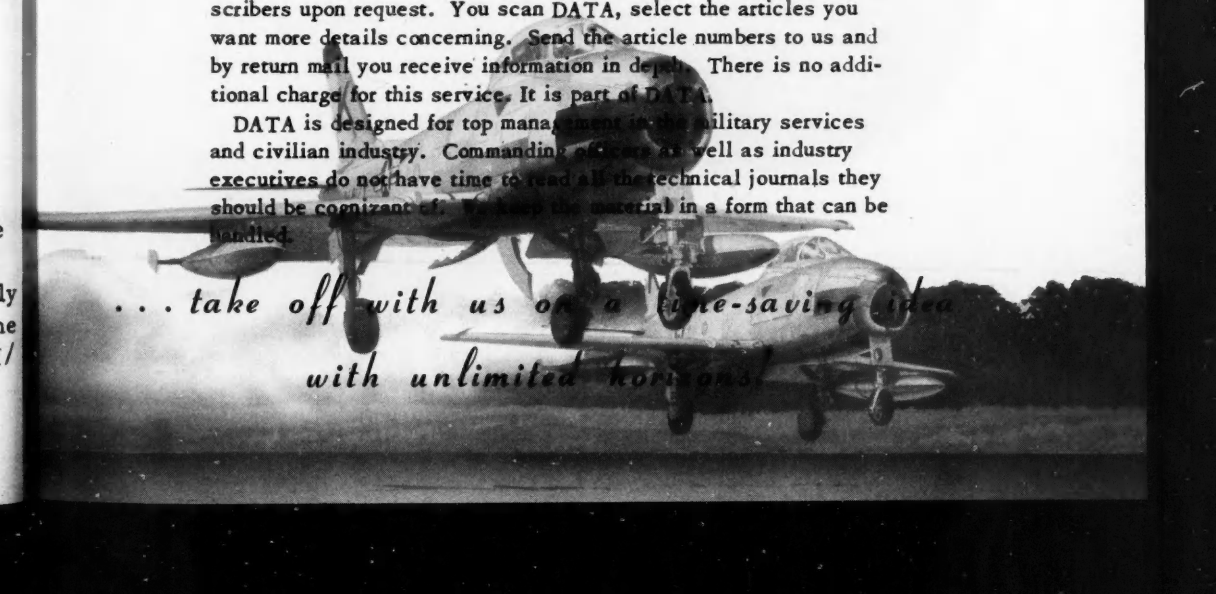

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Radiation effects being studied in special laboratory

The flight date of the first atom-powered airplane may well be advanced as the result of a study being conducted by Admiral for the U.S. Air Force. The problem is to determine the effects of nuclear radiation on electronic components.

All types of electronic components . . . such as tubes, resistors, condensers, capacitors and coils . . . are first bombarded by neutrons to make them radioactive prior to observation and testing.

Admiral has equipped a special nucleonics laboratory to make this study. Test equipment is set up within heavily shielded "hot cells" and operated by remote controls outside each room. One of the "hot cells" contains environmental chambers for testing the radioactive components under extreme temperature and altitude conditions. The laboratory also contains shielded underground storage facilities and a cobalt 60 source of gamma radiation as powerful as some atomic reactors.

Working with radioactive materials is not new to Admiral. For the past seven years the company has been engaged in designing, manufacturing and testing radiation measurement equipment. In this connection Admiral engineers have contributed much to the combined nucleonic-electronic science.

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Government Laboratories Division, Chicago 47

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